ABSTRACT

The present invention relates to a method for fabricating a semiconductor device, which comprises the steps of: forming a device isolation film defining a device region in a silicon substrate; depositing a conductive layer on the substrate and patterning the deposited conductive layer so as to form a gate electrode on the substrate; implanting impurity ions into the substrate so as to form junction regions in the substrate; forming an interlayer insulating film on the substrate and selectively patterning the interlayer insulating film so as to partially expose the surface of the substrate; treating the exposed surface of the substrate; and forming a two-layered contact plug consisting of a first contact plug layer having high impurity concentration and a second contact plug layer having low impurity concentration, on the interlayer insulating film including the exposed surface of the substrate. According to the present invention, the interface between the silicon substrate and the contact plug is thermally treated at low temperature, and the first contact plug layer having high impurity concentration and the second contact plug layer having low impurity concentration, are formed, so that the resistance between the silicon substrate and the contact plug can be reduced,

thereby increasing the operation speed of the device.